

**WHAT IS CLAIMED IS:**

1. A method for deuteration of a compound represented by the general formula [1]:



wherein,  $R^1$  represents an alkyl group or an aralkyl group, which may have a carbon-carbon double bond and/or triple bond;  $R^2$  represents an alkyl group which may have a carbon-carbon double bond and/or triple bond, an aryl group, an aralkyl group, an alkoxy group, an aryloxy group or a hydroxyl group; X represents a carbonyl group or a hydroxymethylene group;  $R^1$  and  $R^2$  may form an alicyclic ring together with a carbon atom contained in X; provided that  $R^2$  represents an alkyl group which may have a carbon-carbon double bond and/or triple bond, an aryl group or an aralkyl group when X is a hydroxymethylene group,

comprising reacting the compound represented by the general formula [1] with a heavy hydrogen source in the co-presence of an activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst.

2. The method for deuteration according to claim 1, wherein X is a carbonyl group in the general formula [1].

3. The method for deuteration according to claim 1, wherein X is a hydroxymethylene group in the general formula [1].

4. The method for deuteration according to any one of claims 1 to 3, wherein the heavy hydrogen source is a deuterated solvent.

5. The method for deuteration according to claim 4, wherein the deuterated solvent is deuterium oxide ( $D_2O$ ).

6. The method for deuteration according to any one of claims 1 to 5, wherein the activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst is one obtained by activating a non-activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst by contacting with hydrogen gas or heavy hydrogen gas.

7. The method for deuteration according to claim 6, wherein the

contact of a non-activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst with hydrogen gas or heavy hydrogen gas is conducted in a deuteration reaction system.

8. The method for deuteration according to any one of claims 1 to 7, wherein the activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst is a catalyst comprising an activated palladium based catalyst.

9. The method for deuteration according to claim 8, wherein the activated palladium based catalyst is an activated palladium carbon.

10. The method for deuteration according to claim 8, wherein the catalyst comprising an activated palladium based catalyst is a catalyst comprising an activated palladium catalyst and an activated platinum catalyst.

11. The method for deuteration according to claim 1, wherein the compound represented by the general formula [1] is tricyclo[5.2.1.0<sup>2,6</sup>]decan-8-ol, and the activated catalyst selected from a palladium catalyst, a platinum catalyst, a rhodium catalyst, a ruthenium catalyst, a nickel catalyst and a cobalt catalyst is a catalyst comprising palladium carbon and platinum carbon.

12. Tricyclo[5.2.1.0<sup>2,6</sup>]decan-8-ol wherein deuteration ratio thereof is 60% or more.